



## **Analysis of Green Columbus Tree Nursery Operations**

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## **Executive Summary**

### **Objective/ Research Goal**

The primary purpose of this report is to evaluate and provide information concerning Green Columbus' Tree Nurseries which are located in Linden and Hilltop communities. This report evaluates the best tree nursery practices for organizations similar to Green Columbus. This report will help aid Green Columbus in their abilities to successfully impact Central Ohio by promoting sustainable living, environmental education, and community involvement. This project also serves as a response to Green Columbus' RFP in our EEDS Capstone course for a tree nursery business case. The findings in this project will serve to help make the two tree nurseries in Linden and Hilltop a sustainable project for the foreseeable future.

## **Overview of Components**

The first objective was to gain knowledge about the best practices for tree nurseries in the Midwest. This report examines different nonprofit organizations within the Midwest that are similar to Green Columbus in how they operate, their overall mission, and options for sustained funding. After analyzing operations throughout the Midwest, we assessed the overall process of tree care and worked to establish a concrete understanding of how tree planting can serve Linden and Hilltop communities. This information forms the basis of our recommendations for how to improve practices for tree nurseries in the Linden and Hilltop areas through operations management.

The second objective was to facilitate key strategies for community engagement. This report examines community centers within the Columbus area to learn more about engagement and collaboration opportunities moving forward. Ultimately, this report aims to strengthen Green Columbus' presence and impact in the Linden and Hilltop communities to ensure lasting relationships and shared leadership roles. Thus, Green Columbus can gain more insight into creating environmentally focused education programs for the youth of these communities. Virtual interviews were conducted to gain information and recommendations from other organizations about how to further Green Columbus as a sustainable tree nursery.

We then used the first and second objectives to address our third objective, which is to create a scope for project outreach. Through understanding and learning more about these communities and how to participate within the community via Green Columbus' tree nursery we recommend a plan of action that Green Columbus can use moving forward.

## **Recommendations**

We have formulated high priority, moderate priority, and low priority recommendations that are based on Green Columbus' operations and finances and how they can improve within these two sectors. For operations, we believe Green Columbus can implement a "Releaf Program" which focuses on combating the urban heat island effect (Appendix C). This can enhance their public relations in the community and harness closer connections. Additionally, Green Columbus can offer several adoption events within a year instead of only one Earth Day tree giveaway. Our group recommends that Green Columbus become an Ohio Nursery and Landscape Association (ONLA) member to have a pathway to discuss more business options with green business industry members. Thus, recommendations include pursuing more education programs, formulating a membership program, and gaining sponsorships for Green Columbus.

## **Introduction**

The following report evaluates the current operating process of Green Columbus' tree nurseries and how improvements can be made to their current practices, future programs, educational outreach, and their financial longevity. Green Columbus has multiple different programs and initiatives that are focused on enhancing sustainability practices in Columbus. They currently host a neighborhood tree stewardship program for the Linden and Hilltop neighborhoods to maintain existing and newly planted trees. They host Green Drinks in order to connect the environmental community in Columbus to share information and collaborate with one another. They coordinate the largest volunteer-driven service event in the country for Earth Day. Alongside these impactful programs, Green Columbus has two tree nurseries where they

grow trees in the Linden and Hilltop communities, which they give away once per year to help increase tree growth in these underserved communities. The project received start-up funding of \$50,000 from American Forests Association and JPMorgan Chase during 2019. Their goal for this project is to find new ways to generate around \$30-40,000 annually to fund a potential summer intern and to be able to continue to operate these tree nurseries. Our goal is to help Green Columbus further their tree nurseries, and we have decided to analyze their current operations and community outreach in order to enhance all aspects of their organization. Green Columbus' mission is to promote sustainable living, environmental education and community involvement through their tree giveaways. The motivation of their tree giveaways is to address the rising urban heat island effect that is taking place in Columbus and distribute more trees to create more shaded areas. Trees also help increase ecosystem services by providing stormwater runoff and improved air quality (Appendix B).

Our first objective was to obtain knowledge on best practices for tree nurseries in the Midwest area, the second objective was to develop key strategies for community engagement, and the third and final objective was to create a scope for project outreach. To discern best practices for tree nurseries we conducted literature review on different tree nursery nonprofits similar to Green Columbus and then conducted virtual interviews with related professionals. We then conducted interviews with community centers in the Columbus area and with Tree Pittsburgh to gather further information about facilitating more educational programs that Green Columbus could incorporate into their platform. We used the information gathered in the interviews to create a project outreach plan.

After analyzing information from the interviews and formulating our project outreach plan, we created a list of recommendations based on high, moderate and low priority. We have

ranked the priorities that are highest based on what we believe would be the most beneficial for Green Columbus to implement moving forward; we assess moderate priorities as beneficial but not crucial; low priority items are ones we think should be significant to Green Columbus whether they decide to implement or not. We recommend that Green Columbus take more initiative to create an educational program which will introduce the youth of these communities to the benefits of trees and their long-term care. Along with this, we found many programs that Green Columbus could provide that would allow them to foster more tree growth in target areas. We also explored different ways to internally generate funding, which would allow the program to expand without monetary constraints.

### **Research Methods**

We connected with leaders in community centers, schools, and sustainability organizations. Through our informational interviews, we gathered expert testimony about unique experiences faced by community stakeholders, tree nursery businesses, and sustainability organizations throughout the United States; we leveraged this information to create a set of recommendations for Green Columbus' two tree nursery operations in Linden and Hilltop. Our group primarily conducted virtual interviews and performed background research to decipher what we believe provides the best insight for Green Columbus' own operations. We formatted our interview questions into three main topic areas: tree nursery business practices, community stakeholders, and similar organizations that distribute trees to increase urban tree canopy. We reached out to Homes on the Hills, the Tuttle Community Center, Tree Pittsburgh, the Arbor Day Foundation, and others detailed below before developing a holistic set of recommendations for community outreach and inclusion.

### **Interview I: Melanie Bueller, Homes on the Hills**

Melanie Bueller, financial manager, shared some great insight into social engagement within the Hilltop community. Ms. Bueller shared an example of a community leader through the story of Lisa Boggs, a woman who is a part of the neighborhood block watch in Hilltop and is in charge of organizing different events and festivals. Working together with community organizers like Lisa would be a great way for Green Columbus to reach out and get to know more people in the Hilltop area. By collaborating with community organizers, Green Columbus could sponsor an event and bring people together in the communities, which would accomplish Green Columbus' goals and increase knowledge about the community tree nurseries.

### **Interview II: Tish Gauntner, Tuttle Community Center**

According to Tish Gauntner, Assistant Manager, the Tuttle Community Center opened in 1975 and the pool opened in 1978. They post flyers for programs and utilize a word of mouth approach to building relationships in the community. Word of mouth marketing is essential for community events and attracts citizen participation. One challenge they have faced in reaching a broader scope of community members includes engagement in athletics because they are historically an art center and have a small gym. Additionally, they are located south of Whetstone, which has a big youth soccer program. Currently, they partner with University Kiwanis and OSU Circle K club. In terms of a local partnership, the Tuttle Community Center can use help with running workshops and programs directly for the community. Green Columbus could work jointly with community centers to create educational programs and lessons for youth about the importance of trees and their benefits to society.

Gauntner discussed an organization called Local Matters that worked with Columbus Community Centers and kick-started individual gardens alongside instructional classes with garden representatives and kids. The funding for this project is gone, but the Tuttle Community



Center has seeds for their garden. Columbus Community Centers applied for two grants but were denied both, so funding for gardening is stretched this year and different community centers will have varying levels of economic security. Overall, the garden is popular at Tuttle Community Center. While keeping the differences between gardening and planting trees in mind, there is still potential for a collaboration with existing gardening programs where Green Columbus could focus on planting trees in close proximity to the garden.

### **Interview III: Anna Defendiefer, Columbus Recreation and Parks Community Relations**

Anna Defendiefer is a Community Relations Coordinator for the Columbus Recreation and Parks Department. She is responsible for summer programming, fundraising, the bench donation program, and various events put on by the department. The main challenge her organization faces is maintaining an active line of communication within the community because their participation and responses are often lacking, and inconsistent communication makes it difficult to coordinate community events in a timely manner.

Currently, Columbus Parks and Recreation partners with various nonprofits and they specifically look for partners who are communicative and willing to work together. There is a passion for helping the community throughout the department, and they are looking to partner with organizations who share that passion. While Defendiefer did not want to speak on behalf of the entire department, her team is always looking for potential programming ideas and partnerships. She thought that an educational program hosted by Green Columbus on the importance of trees and their benefits to society sounded interesting. This represents another opportunity for Green Columbus to continue growing new roots in the city.

### **Interview IV: Maura O'Neill, Tree Pittsburgh**

Maura O'Neill is the Director of Communications at Tree Pittsburgh and is responsible for developing funding which includes grant writing and marketing. She also is tasked with expanding Tree Pittsburgh's (Tree Pitt's) education programs. Her background includes managing funding and marketing programs at public media and health development organizations (Tree Pittsburgh, 2021).

O'Neill stated that the key to their successful education program is that they have a full-time education position that both coordinates and fosters a close relationship with local schools. This could be a new position that Green Columbus can eventually adopt as it is also profitable. When approaching schools about participating in Green Columbus' tree nurseries it is important to ask the teachers what Green Columbus can do for them, rather than focus on how the teachers can contribute to Green Columbus.

Although Green Columbus has the largest volunteer Earth Day program, additional volunteers that specifically attend tree nursery events would be beneficial. O'Neill's first piece of advice was to have a sign-in sheet at every event. These sign in sheets would include a space for email addresses which would allow Green Columbus to track their volunteer base and send reminders of event dates and updates on progress. O'Neill stated that the most important way to attract volunteers is by utilizing social media.

O'Neill stated that funding was their biggest hurdle to overcome and the most important task they pursue today. When looking for funding, one strategy they use is writing grants as a stipend for the community. For a recent grant, they awarded \$3,000 dollars to each organization that contributed to the project at hand. Donors and grantors appreciate when they know the money they donate will circulate throughout the community and incentivize other businesses or nonprofits to participate. Another steady source of funding for Tree Pittsburgh is merchandise

sales. These sales are conducted through their website and require less personnel to manage. Last year Tree Pitt grossed \$4,000 in merchandise sales alone.

### **Interview V: Nicole Mota, Tree Pittsburgh**

Nicole Mota is the Operations manager for Tree Pitt and she has a background working with nonprofits. She works on sub-contracting professionals to perform work specific to Tree Pitt initiatives. This operation has been successful for Tree Pitt and it helps keep costs down while also getting professional help to proceed with a program. She mentioned using “CafePress,” an online retailer, to facilitate merchandise operations and create user-customized, on-demand products.

In order to help with efficiencies and costs, Mota recommended taking full advantage of Green Columbus’ nonprofit status. This will give Green Columbus discounts on almost everything they need to purchase for programs including sales tax, income taxes, tax deductible contributions, and benefits with groups such as Ohio Nursery and Landscape Association (ONLA). Additionally, she mentions techsoup.org who serves as the tech middleman for Tree Pitt’s software. This could be a valuable resource for Green Columbus as they improve management of tree nursery operations. Additionally, Tree Pitt partnered with Carnegie Mellon University (CMU) business college to help expand current progress and serve low income areas. Tree Pitt has noticed spatial patterns in areas with low tree canopy coverage and low-income households. Mota states that they specifically target these low tree canopy coverage areas and from her experience, funders tend to want to support these types of communities, which could help alleviate some expenses for the programs and initiatives that Green Columbus creates and implements.

An absolute priority for an organization like Tree Pitt or Green Columbus is to be conscious of reaching out to organized groups in the community and what strategies are used for outreach. Green Columbus should talk about what its organization does and what it brings to the table, as well as how it would be beneficial to the specific community. Programming should also highlight how the community members themselves can make a difference for the greater good of their communities and encourage them to be part of the solution. Tree Pitt is an organization that these community groups initially reach out to, thus, Green Columbus can establish a streamlined communication method so communities in need can reach out for help.

Tree Pitt's "ReLeaf" program has been inactive for a few years but it was a hybrid idea to re-create the tree canopy space lost due to urbanization in a specific community that suffers from the urban heat island effect. Mota mentions the program was created with a tracking system, using the address of where each tree is planted to trace tree plantings and maintain a user database. This allows the organization putting on the program to track the amount of greenspace provided from the program and to follow up, making sure the trees planted are maintained and staying healthy. Mota could not remember who initially created the program, but they did utilize the idea and make a few changes based upon the specific needs of the target community. Tree Pitt knows the maintenance of trees is important, and has created an informative sheet for the recipients of trees to follow that includes actionable steps in maintaining a healthy living tree. Following up with these recipients is vital to the success of the program, thus, the workload gradually becomes geared towards following up with tree plantings and stakeholders.

Additionally, Tree Pitt uses terms like "tree adoption" versus "tree giveaway" to help make providing these trees not reflect a "handout" from an outsider. Green Columbus should emphasize being a guiding hand, with the "adopter" taking responsibility for care. This is an

important step that Green Columbus is already aware of due to previous experiences with trying to help underserved communities who feel that these outside organizations may be acting too much with a “saviorism” mindset.

For successful distribution and implementation of the program, it is vital to educate and prepare the recipients of trees. One example of how Tree Pitt fulfills this need is by creating resources that educate on how to maintain the trees. Their organization makes videos that are accessible to the recipients and teach how to grow and maintain a tree over its lifetime. Additionally, if there still seems to be trouble for the recipient, Tree Pitt provides further information or help. Furthermore, Mota mentions it might be a good idea for Green Columbus to put on two “giveaways” versus just one. This could mitigate any problems due to not being able to make that specific date and participate in the program. The fall season is a good time to plant trees, so Green Columbus can set up one of these “tree adoption” events in the early fall so more people can participate.

Tree Pitt has collaborated with Tree Atlanta and ideas are bounced back and forth on what programs or ideas would benefit these communities and how best to implement these initiatives. Mota recommends Green Columbus designate a position, whether paid or volunteer, to help Green Columbus’ tree nursery project communicate more with outside organizations. The person in this role could help formulate strategies to better incorporate the trees into targeted areas of thin canopy in and around Columbus. The focus would be to provide additional perspective and experience on how to use the tree nurseries for their intended purpose, which is getting more trees planted in areas with thin canopy. This could also lead to the identification of a “sister” organization that Green Columbus can collaborate with in the future to produce the best strategies for incorporating the two tree nurseries into their communities.

Finally, Tree Pittsburgh started their education programs using tree ID tours in and around the city and having other nonprofit partners with lots of land. Tree Pitt targets low-income community members for job training using a grant funded program that has only been in operation for five months. Therefore, it is uncertain if this initiative is successful or worth Green Columbus' concentration, but it may end up being very beneficial to implement due to its unique business strategy. Tree Pitt has hired three people so far from this initiative and plans to hire even more. Additionally, Tree Pittsburgh expanded its programs through on-site tree ID tours, going to schools and community centers to walk around the property and educate about trees. They also perform tree nursery tours for kids and promote their programs through social media. Green Columbus can perform similar tree tours and social media programming to inform local groups and stakeholders about their tree nursery giveaways and events.

#### **Interview VI: Logan Donahoo, Arbor Day Foundation**

Logan Donahoo is the Programs Manager of the Arbor Day Foundation's recognition programs: Tree City USA, Tree Campus Higher Education Program, and Healthcare Program. All programs have a common model that establishes a set of standards for a community or campus to meet within a given calendar year. The healthcare program connects inpatient healthcare facilities of all sizes with local community forestry programs to improve human health outcomes, while improving the extent and condition of the community forest. Similarly, the tree campus program works with colleges and universities to sustain community forests. Upon completing program requirements, groups earn recognition and are awarded materials to display from the Foundation. Donahoo works to invite any entity into their mission to inspire people to plant, nurture, and love trees. The standards of this program provide structure and rigor

that any size community can participate with and grow beyond the program baselines and forestry resources.

An important dimension of tree planting programs is having a cross-functional focus. This means efforts are dispersed across important program aspects such as taking care of trees and planting, coordinating sustainability efforts, and creating various task forces to address organizational action for staff and providers. Green Columbus can work with community centers and surrounding school districts to plant trees in priority places and utilize resources from the Arbor Day Foundation's Tree Campus, and Healthcare Programs as a template to filter down tree planting initiatives for Linden and Hilltop residents.

In terms of leveraging school districts for collaboration, Green Columbus should work with higher education institutions to broaden their awareness of partnerships at the community level. The Ohio State University, Capital University, and Denison University are designated as Tree Campus USA institutions and can share resources with Green Columbus. It is important to stay up to date with other programs in collaboration with colleges and universities; bigger networks increase opportunity. The Arbor Day Foundation facilitates a program with K-12 schools and works to plant trees with an educational component for children. This creates an opportunity to impact youth at an impressionable age, as children start to develop their curiosity. Educational programs with students can encourage schools to use their trees as learning tools and connect activities and lessons to nature. Existing collaborations with other NGOs can be leveraged to formalize and strengthen the K-12 school program and Green Columbus can increase youth exposure to nature and foster an environment-based education movement. Green Columbus currently partners with The Columbus Foundation, The City of Columbus, Great Lakes Brewing Co, The Ohio State University, Kroger, COTA, CAR2GO, 90.5 WCBE, 92.9

FM, CLIF Bar, and Zapier (Green Columbus, n.d.). Green Columbus can reach out to school districts surrounding Hilltop and Linden to initiate communication between individual teachers and educators.

Additionally, Green Columbus is a member of the Alliance for Community Trees, a program under the Arbor Day Foundation composed of community-based organizations planting and caring for trees. As part of the program, organizations partner with a consultant to identify practical ways to connect with people who live and work in a community. It is key to engage partners early on and identify who is already making an impact in the community and who can help integrate Green Columbus into the community. Green Columbus can act as a home base for potential employee engagement and volunteerism activities across the Greater Columbus area and direct its volunteer planting in Linden and Hilltop spaces.

Finally, Donahoo discussed the implications of global climate change and species resiliency as ecosystems evolve. As an organization working to increase tree canopy cover, it is critical for Green Columbus to understand the needs of the community in terms of forestry planning and create long-term goals that identify the types of trees more adapted to a neighborhood setting and that will be climate resilient in the next several decades. Green Columbus distributes Black Cherry, Bur Oak, Red Oak, Chinkapin Oak, and Sycamore trees (Green Columbus, n.d.). Therefore, Green Columbus should identify priority planting areas and the types of tree species that will thrive in dynamic conditions.

#### **Interview VII: Ed Kapraly, Riverside Native Trees and Nursery**

Ed Kapraly is the Founder and Owner of Riverside Native Trees and Nursery and he also is the supplier for Green Columbus for the trees which they plant at their tree nurseries to distribute within the communities. Riverside Native Trees is a For-Profit business, so many of



their practices differ from how a nonprofit like Green Columbus might operate. Nonetheless, we thought it might be helpful to look more closely at tree nurseries to gather any additional recommendations or perspectives on operations management. Kapraly shared information about how they try to give back to their community by helping students who have worked part-time for the nursery with a scholarship to help pay for college. Kapraly mentioned that they had not been as involved in community events or outreach due to the fact they are such a small business and with limited resources and the extenuating circumstances of COVID-19. Kapraly shared some insight into how important it is to have someone working with the tree nurseries who has a concrete knowledge of tree health. This is an important factor for Green Columbus in selecting their summer intern to make sure they possess these skills. Green Columbus might have the intern do training beforehand with a horticulture specialist in order to gain practice and skills.

#### **Interview VIII: Emily Showalter, Ohio Nursery and Landscape Association (ONLA)**

Emily Showalter is an Ohio State Alumna and was the Vice-President of the 2019-2020 ONLA board of directors. The Ohio Nursery and Landscape Association (ONLA) leads, promotes, and facilitates the success and growth of green industry businesses. Green industries, including nurseries, tree nurseries and wholesale providers of all plants, use this membership as a tool to improve their own business operations. However, only members of the ONLA are able to partake in these recurring meetings that give this insight on what other companies in the field of green industry are currently doing to continue their success. If Green Columbus were to look into becoming a member of this organization, it could give them a tremendous amount of ideas to consider in their own business strategies to be even more successful at meeting their goals as an operational business and organization. Leaders in the field of green industries, including other tree nurseries in the area, meet to discuss plans and initiatives they are currently working on, or

plan to in the future. These ideas are then discussed with all members to decide the best possible solutions to various problems that arise and goals that have been established by a certain organization. The benefit to Green Columbus would be all the insight from a multitude of green industry leaders that have professional experience in the field.

This is an alternative suggestion for Green Columbus due to the fact that ONLA has not previously worked with nonprofit organizations. However, according to Showalter, ONLA would be willing to collaborate with nonprofit organizations in the future. The downside for Green Columbus in pursuing becoming an ONLA member is that since these other organizations are all for-profit businesses, they may not share similar business plans to those of Green Columbus.

### **Recommendations**

Our group has categorized our recommendations into subgroups, including high, moderate, and low priorities. This is intended to better convey our most important findings to Green Columbus and for them to focus on the topics we have concluded are most beneficial and effective for them to implement in the future. We have also decided to separate our operations recommendations from the financial recommendations to be as clear as possible.

### **Operations**

#### ***High Priority***

Our first recommendation is that Green Columbus conduct a neighborhood-level program based on Tree Pittsburgh's "ReLeaf" program to target thin canopy communities and combat the urban heat island effect. This program would rely on cooperation and communication between communities suffering from low canopy and Green Columbus. This program would be solutions-based for real problems faced by communities suffering from high temperatures perpetuated by the urban landscape and further exacerbated by a lack of resources. Upon implementing this

program, Green Columbus can overlap tree adoption events alongside the “ReLeaf” initiative. In order to better create this program, we recommend formulating a tracking system to document where the trees provided are going using geospatial information systems (GIS). This can ensure the long-term health of the trees and provide data for future programming and grant opportunities.

Our second recommendation is Green Columbus should build upon and form new public relationships with organized groups in targeted communities to promote collaboration between Green Columbus and the Hilltop and Linden areas. This would include collaboration with community centers to deliver educational services on urban heat island effect and how to combat its implications. These initiatives will increase engagement and collaboration with school districts in Linden and Hilltop and identify potential partnerships with a broad range of Columbus organizations.

Lastly, we recommend several “tree adoption” events in place of the annual Earth Day “tree giveaway.” This would be done to help comply with the needs of community members by allowing for greater participation in the event. This benefits the public by improving the abilities and knowledge of citizens, which strengthens sustainability and rejuvenates the environment.

### ***Moderate Priority***

We recommend that Green Columbus create a basic educational program that is transferable between community centers and schools. There can be two separate programs, one suited to ages 12 and under, and one ages 13 and up, that will help drive home Green Columbus’ goal of helping their target communities. These programs would include an overview of why trees are important to urban communities, current issues with tree canopy in Columbus, and how Green Columbus is addressing that problem. We believe these programs would promote visibility and awareness for the tree nurseries.

### ***Low Priority***

We recommend that Green Columbus become an ONLA member to gain additional ability to discuss business operations with green industry leaders and businesses located throughout Ohio. This membership could give Green Columbus a tremendous amount of ideas to consider in their own business strategies to be even more successful at meeting their goals as an operational business and organization. It would allow them to discuss best tree nursery practices directly with green industry leaders as well as offer insight on strategies gained from years of experience to better operate a tree nursery.

### **Financial**

#### ***High priority***

Implementing an education program at Green Columbus would allow for increased grant eligibility and potential grants awarded. Additionally, to attract donor attention, Green Columbus could include a stipend in grant proposals for specific projects that would award a sum of money to participating organizations. This could increase the likelihood of Green Columbus being awarded grants, similar to the practice mentioned by Maura O'Neill at Tree Pittsburgh.

Secondly, all of the nonprofits that we interviewed had many avenues for fundraising features on their websites. One of these avenues is the addition of merchandise sales and multiple ways of donating. Tree Pittsburgh uses CafePress as a contractor to handle all online merchandise sales and this would alleviate any need for storage or additional personnel for Green Columbus. Additionally, by utilizing their status as a nonprofit, Green Columbus can receive discounts from CafePress. Another strategy is seen on the website of One Tree Planted, which is a large nonprofit organization that plants trees all over the world. Their website allows an

individual to pay a specific amount that equates to a specific number of trees planted (One Tree Planted, 2021).

Another option for donation is to name a ReLeaf program to a specific location. For example, “ReLeaf Hilltop” would allow donors to have the knowledge that their money goes straight to the Hilltop community.

An important feature of the One Tree Planted website is the shareable social media campaigns that are beneficial due to the lack of cost involved (One Tree Planted, 2021). This would include a URL that routes the user to a Green Columbus donation page and would feature a fundraising goal for the individual and real time tracking.

### ***Moderate priority***

A good way to get surrounding communities involved is the “buy a tree, give a tree” campaign, where every tree sold then provides funds for multiple trees to be planted in low canopy communities. Another recommendation to gain funding if a business cannot commit to continuous donations, is a program where they can fund a specific event even if they are just allowing Green Columbus to use their land. The incentive could then be a large banner featuring their business’ name, logo, and any other information they advertise.

A great way to foster long term business funding is to incentivize partnerships with businesses by sharing their posts on social media and also creating new posts about them. When asking a business to become a sponsor, cite how many followers on social media Green Columbus currently has and commit to marketing for them. This recommendation would require database management to ensure the sponsors are evenly promoted, and this management would consist of around 5 hours a week of posting and tracking. Once a substantial amount of documentation has occurred, it can be presented to other potential sponsors. Currently Green

Columbus does include posts featuring their partners, but a higher frequency of posts would be beneficial.

### ***Low priority***

An option for website expansion is a membership program where the member gets a t-shirt, stickers etc., and they pay a monthly fee (Tree Pittsburgh, 2021). This is also a great way to obtain emails to send out event dates and locations. Such a program does require database management, which can be time consuming, but a subscription structure could avoid this issue.

Arbor Day Foundation mentioned that utility companies may be willing to work with Green Columbus to lower energy costs.

### **Areas of Further Research:**

Due to limited time in this semester project, we were not able to conduct all the interviews we would have liked. However, even without this extra research, our group feels confident in our work thus far to give Green Columbus a detailed set of recommendations. One interview we did not have the time to conduct was an interview with a current ONLA member to provide additional perspective from the experience of an actual ONLA member of what ONLA does for its business and if this membership is worthwhile. Another interview we were unable to conduct was with a community center located either in the Hilltop or Linden community. This would be a useful point of contact for recommendations as it provides advice directly related to the communities where Green Columbus is located. Another interview we could not conduct was with Jake Milofski, Tree Pitt's urban forester, who played a major role in the creation and implementation of the "ReLeaf" program that Tree Pitt facilitated in 2014. This would be a very useful person to assist Green Columbus if they were interested in a program such as this.

### **Conclusion**

Our report is geared towards providing Green Columbus with background research and expert interview testimony to improve the business operations of Green Columbus' tree nursery project. After speaking with various organizations around the Columbus area and across the United States, we think our recommendations can help Green Columbus meet their overarching goal to promote sustainable living in Central Ohio. One area of focus for our group was to combat the urban heat island effect which is disproportionately felt by underserved communities. By planting trees in low canopy neighborhoods, Green Columbus is building environmental resiliency to combat the harsh impacts of global climate change. Keeping this in mind, we directed our research towards programs addressing low canopy communities, educational services, and internal funding. Implementing a "ReLeaf" program targeting the Linden and/or Hilltop communities is one way for Green Columbus to make a positive impact on social and ecological wellbeing. In addition, Green Columbus can build upon and form new public relationships with organized groups in targeted communities to promote collaboration between Green Columbus and Central Ohio. This would include collaboration with community centers to deliver educational services outlining the urban heat island effect and how to combat it. Furthermore, this creates increased grant eligibility and an increase in total grants awarded as well as providing ideas for how to internally generate funding to cover operating costs.

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## **Appendix A: Interview Questions**

### **Questions for Melonie Buller**

- ❖ Do you have any contacts within the Hilltop Community that can work with Green Columbus?
- ❖ How does your nonprofit organization connect with community members (Homes on the Hills)?
- ❖ What organizations do you partner with?



- ❖ Who in the Hilltop community would you recommend us to reach out to with regards to community involvement with a nonprofit group?
- ❖ Are there any current initiatives or goals that Homes On The Hills is currently pursuing or would like to pursue in the future related to increasing greenspace in the community?
- ❖ What are your thoughts about the Hilltop community's willingness to partner with a local nonprofit organization that would like to help mitigate effects of increased developed areas and the loss of greenspace?
- ❖ What are your thoughts about a workshop collaboration with Green Columbus to provide information on the benefits of trees?

#### **Questions for Tish Gaunter, Tuttle Community Center**

- ❖ How long has the community center been in the neighborhood?
- ❖ What are some of your main programs right now?
- ❖ How have you approached building relationships in your community?
- ❖ What are some of the challenges (community center name) has faced in reaching a broader scope of the community?
- ❖ What organizations do you currently partner with?
- ❖ What are you looking for in a local partnership? What services provided by your partners are beneficial to your organization?
- ❖ What are your thoughts about the Columbus community's willingness to partner with a local nonprofit organization that would like to help mitigate the negative effects of development and the loss of greenspace?
- ❖ What are your thoughts about a potential workshop collaboration with Green Columbus to provide information on the benefits of trees?
- ❖ Do you have any recommendations on who else we could possibly get in contact with to learn more about local community engagement?

#### **Questions for Anna Defendiefer**

- ❖ What is your role in the Columbus Recreation & Parks Department? How long have you been working there?
- ❖ What are your primary responsibilities as a community relations coordinator?
- ❖ So I can imagine you face some challenges when trying to connect with a community, what are some of the challenges that you've experienced?

- ❖ Do you partner with any organizations? What do you look for in a partnership?
- ❖ Green Columbus is a nonprofit that currently operates two tree nurseries in the Linden and Hilltop communities. Do you see the potential for collaboration between your department and Green Columbus? If so, what kind of collaboration could you envision?
- ❖ One thing my team is interested in recommending to Green Columbus is a type of educational program that focuses on the importance of trees and their benefits to people. We hope it could help build some grassroots interactions between them and their local community. Do you believe that is something that some of the community centers throughout the Hilltop and Linden communities would be receptive to?

### **Questions for Tree Nurseries**

- ❖ How do you serve lower income communities?
- ❖ How does your nursery target its customers and which of these methods seem to be most successful?
- ❖ How does your nursery manage limited resources?
- ❖ What Integrated Pest Management (IPM) methods do you implement and would like to see done in the community?
- ❖ What were/are your initial steps in connecting with your community?
- ❖ What kind of community outreach initiatives does your nursery conduct or partake in if any?
- ❖ Do you provide any educational services for the maintenance of the trees?
- ❖ Do you provide any educational services about the importance/benefits of planting trees?
- ❖ How does your tree nursery try to conserve its resources?

### **Questions for tree nurseries (Ed Kapraly)**

- ❖ How do you serve lower income communities?
- ❖ When first starting out your business for a tree nursery what was your greatest hurdle to overcome?
- ❖ Are there any specific ways that you serve lower income communities?
- ❖ What IPM (Integrated pest management) methods do you implement and would like to see done in the community?
- ❖ What were/are your initial steps in connecting with your community?

❖ What kind of community outreach initiatives does your nursery conduct or partake in if any?

❖ Do you provide any educational services for the maintenance of the trees?

❖ Should the intern be trained by Ed or somebody knowledgeable about tree planting?

To ensure the health and longevity of the trees.

### **Interview Questions for Tree Pittsburgh**

❖ How did Tree Pitt start out their education programs? How were they expanded?

❖ How did you secure long lasting relationships with your local schools? As an NGO, what opportunities are you creating in your education program? (jobs, internships, arborists, etc.)

❖ What is your most effective way of recruiting volunteers? Do you have a program that trains them to be leaders within your organization and how do you advertise these positions?

❖ Where does the majority of your funding come from? Where does it go? (biggest expense, cause, program)

❖ What was your biggest hurdle to overcome? How did you overcome it?

❖ Do you have any other advice for a small non-profit tree nursery? Other contacts I can reach out to?

### **Interview Questions for Arbor Day Foundation**

❖ How do you secure long term relationships with patients, patient advocates, and/or residents in the Tree Campus Healthcare Program?

❖ As an NGO, what resources are provided to stakeholders in forming facility tree care plans?

❖ Do you have a program that trains community members to be leaders within your organization and how do you advertise these positions?

❖ What is your most effective way of recruiting volunteers within local communities for Healthcare and Campus partnerships?

❖ Where does most of your funding come from? Where does it go?

❖ When first starting out program operations, what was your greatest hurdle to overcome?

❖ Tree Campus Higher Education is only open to 2- to 4-year accredited colleges and universities & The Tree Campus K–12 program works at those levels: do these programs overlap? What is your advice for a small NGO getting involved in K-12 programs?

- ❖ Do you have any other advice for a small nonprofit tree nursery?
- ❖ How do you serve lower income communities?
- ❖ How does your NGO target its customers and which of these methods seem to be most successful?

## **Appendix B: Tree Benefits & Canopy in Columbus**

**TREE CANOPY BENEFITS PROVIDED BY 22% CANOPY IN COLUMBUS**



**Annual carbon captured**

**168,000 tons**

**SERVICE VALUE: \$3.9 Million**

Using trees to 'sequester' this CO<sub>2</sub> is a key part of the Columbus Climate Adaption Plan's goal to make the city more climate resilient.



**Annual air pollution removed**

**2.5 million pounds**

**SERVICE VALUE: \$4.6 Million**

Ozone and particulates can especially aggravate existing respiratory conditions (like asthma) and create long-term chronic health problems (American Lung Association 2015).



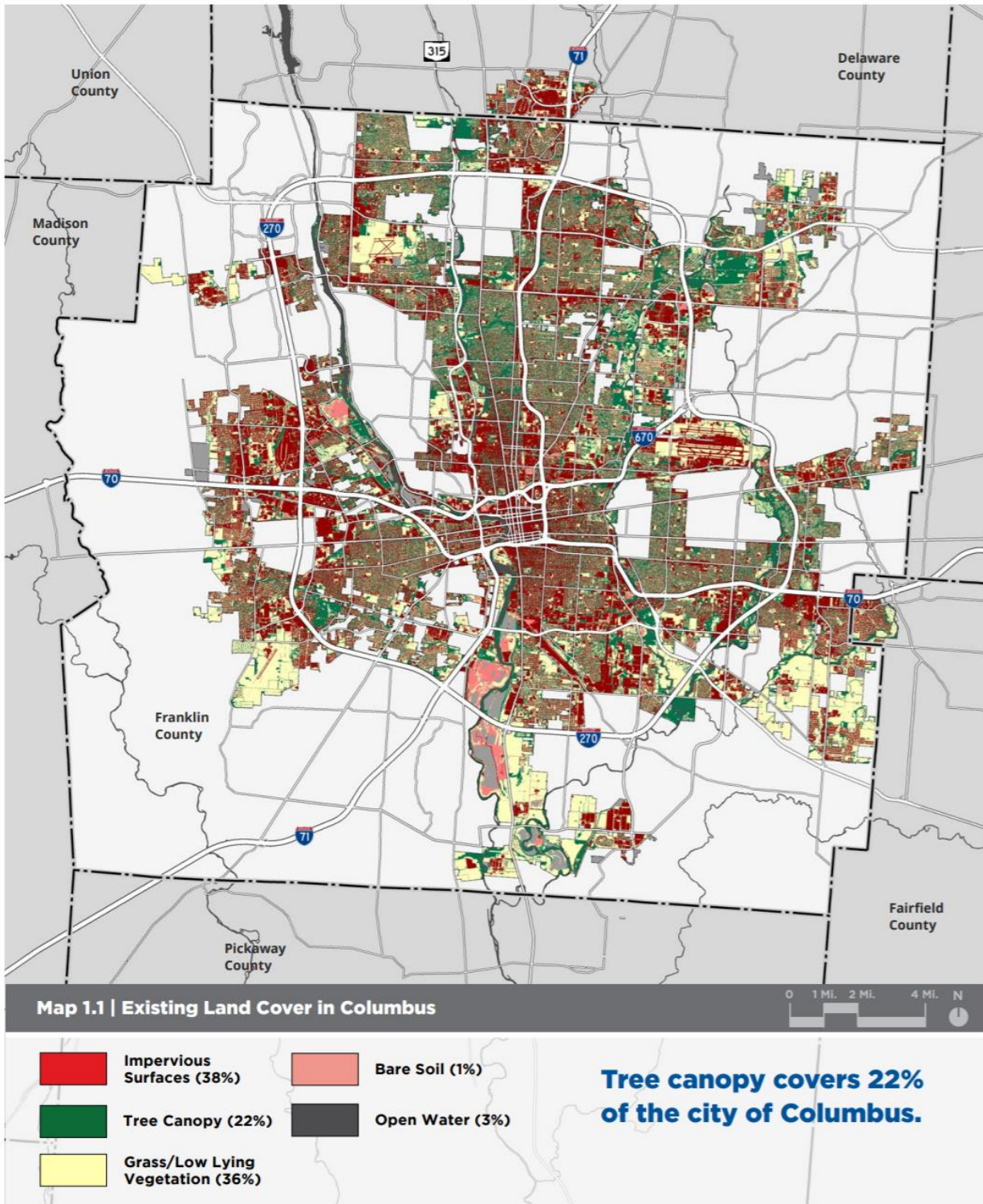
**Annual rainwater intercepted**

**331 million gallons**

**SERVICE VALUE: \$29.5 Million**

Contaminated stormwater flows into overloaded engineered sewers, ultimately reaching the local lakes and streams. Polluted water is a major cause of human health issues and degrades the local ecology.

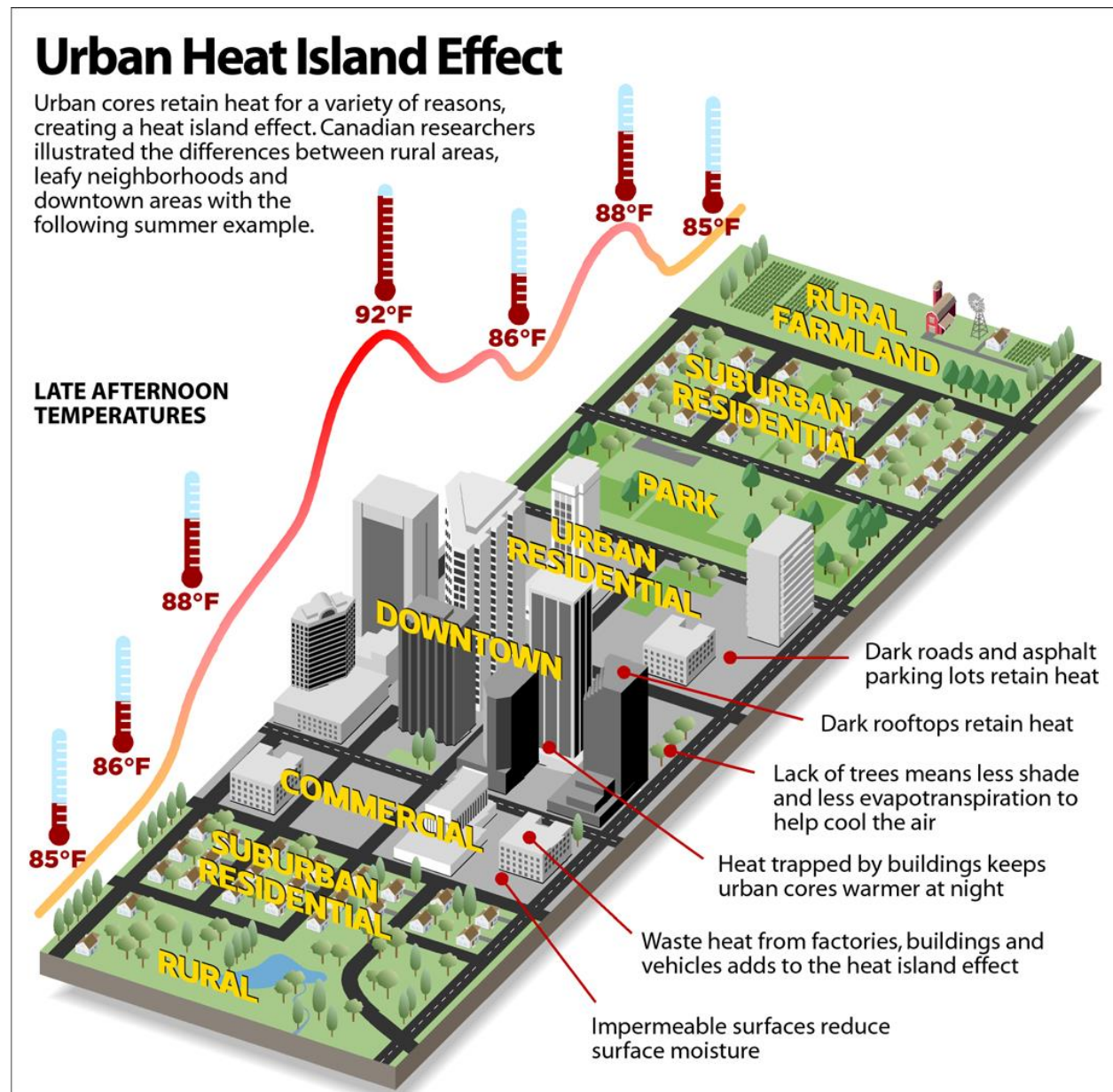
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## Appendix C: The Urban Heat Island Effect in Columbus



SOURCE: D.S. Lemmen and F.J. Warren, Climate Change Impacts and Adaptation

PAUL HORN / InsideClimate News

SUMMER HEAT IN

# Columbus

UP TO

**24.0°** HOTTER IN THE CITY  
THAN IN NEARBY  
RURAL AREAS

AVERAGE

**4.4°** CITY SUMMERS ARE  
HOTTER THAN IN  
RURAL AREAS

**16** MORE DAYS ABOVE  
90° F EACH YEAR,  
THAN RURAL AREAS

**No.8** BIGGEST DIFFERENCE  
BETWEEN URBAN AND  
RURAL TEMPERATURES



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